



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,595	09/26/2001	Don Brunnett	3123-321	3497

7590 06/03/2004

Marsh Fischmann & Breyfogle LLP
Suite 411
3151 S. Vaughn Way
Aurora, CO 80014

[REDACTED] EXAMINER

DUNCAN, MARC M

ART UNIT	PAPER NUMBER
2113	3

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/965,595	Applicant(s) BRUNNETT ET AL.
	Examiner Marc M Duncan	Art Unit 2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 September 2001.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,6,9-11,13-15,17,19,20,22-25,29,33 and 34 is/are rejected.
- 7) Claim(s) 3-5,7,8,12,16,18,21,26-28,30-32 and 35 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 September 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 2.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Status of the Claims

Claims 9 and 17 are rejected under 35 U.S.C. 112, second paragraph.

Claims 1-2, 10-11, 22-25, 33 and 34 are rejected under 35 U.S.C. 102(e).

Claims 6, 13-15, 17, 19, 20 and 29 are rejected under 35 U.S.C. 103(a).

Claims 3-5, 7-8, 12, 16, 18, 21, 26-28, 30-32 and 35 are objected to.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "the second final verification test" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "the ERC" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2113

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 10-11, 22-25, 33 and 34 are rejected under 35 U.S.C. 102(e) as

being anticipated by Lenny et al.

Regarding claim 1:

Lenny teaches means for monitoring the computer system, including whether any user commands from the computer system are pending or the computer system is in an idle mode in col. 2 line 67-col. 3 line 1.

Lenny teaches at least one test processing module configured to perform at least one manufacture test process on the disk, wherein the at least one manufacture test process is performed in a particular manner depending on whether the computer system has issued the user commands or the computer system is in the idle mode in col. 2 line 67-col. 3 line 7 and col. 8 lines 64-65.

Lenny teaches means for tracking performance of the at least one manufacture test process such that counters may be stored in memory which indicate which portions of the disk have been processed through the use of the at least one manufacture test process in col. 6 lines 31-36.

Regarding claim 2:

Lenny teaches the at least one manufacture test process including at least one of flaw mapping, embedded runout compensation (ERC) and final verification in col. 8 lines 64-65 and col. 9 lines 7-10.

Regarding claim 10:

Lenny teaches wherein the disk of the disk drive is configured such that a predetermined portion of the disk is processed before installation of the disk drive in a computer system, and the portions of the disk drive which have been processed are identified in the means for tracking performance in col. 1 lines 47-61 and col. 6 lines 31-36. The test result information is equivalent to the portions of the disk drive that have been processed.

Regarding claim 11:

Lenny teaches wherein the predetermined portion of the disk is configured such that any major flaws which may be in the disk are detected before the drive is installed in the computer system in col. 1 lines 47-61. The purpose of the certification testing and burn-in are to detect any major flaws present before installation.

Regarding claim 22:

Lenny teaches at least one electromagnetic storage disk with a plurality of radially spaced tracks for storing information in col. 1 line 40. A hard disk drive has at least one electromagnetic storage disk with a plurality of radially spaced tracks for storing information.

Lenny teaches at least one head configured to read/write information on the electromagnetic storage disk in col. 1 line 40. A hard disk drive has at least one head configured to read/write information on the electromagnetic storage disk.

Lenny teaches at least one processing module stored in memory which is accessible to perform manufacturing test processing of the electromagnetic storage disk while the disk is installed and operating in a computer system in col. 4 lines 20-22. In order to perform the diagnostic tests, they must be stored in a memory.

Lenny teaches a controller in connection with the head which is configured to execute the at least one manufacture test process upon detection of predetermined conditions of the computer system configured to control operation of the head which is further configured to include detection means which may detect when the computing device is idle, such that the processing module may be activated and manufacturing test processing be performed in Fig. 1, col. 2 line 67-col. 3 line 7, col. 4 lines 47-55 and col. 8 lines 64-65.

Regarding claim 23:

Lenny teaches wherein the at least one processing module is storable in read only memory (ROM) in col. 4 lines 53-55. The controller has a ROM that is available for storing data, such as the processing module.

Regarding claim 24:

Lenny teaches wherein the at least one processing module is storable on a processed area of the at least one electromagnetic storage disk in col. 3 lines 15-28. It

Art Unit: 2113

is inherent in the function of a hard disk drive that a processing module or any data pertaining to an application program is storable on a processed area of its storage disk.

Regarding claim 25:

Lenny teaches the at least one manufacture test process including at least one of flaw mapping, embedded runout compensation (ERC) and final verification in col. 8 lines 64-65 and col. 9 lines 7-10.

Regarding claim 33:

Lenny teaches wherein the disk of the disk drive is configured such that a predetermined portion of the disk is processed before installation of the disk drive in a computer system in col. 1 lines 47-61 and col. 6 lines 31-36.

Regarding claim 34:

Lenny teaches wherein the predetermined portion of the disk is configured such that any major flaws which may be in the disk are detected before the drive is installed in the computer system in col. 1 lines 47-61. The purpose of the certification testing and burn-in are to detect any major flaws present before installation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 13-15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lenny et al. in view of Rothberg (106).

Regarding claim 13:

The teachings of Lenny are outlined above.

Lenny does not explicitly teach performing corrective processes on the portions of the disk for which errors detected. Lenny does, however, teach detecting errors using a self test.

Rothberg (106) explicitly teaches performing corrective processes on the portions of the disk for which errors detected in Fig. 7 reference number "721."

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the correction teachings of Rothberg with the detection teachings of Lenny.

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because Rothberg (106) teaches that repairing errors after their detection allows a reliably performing drive and a drive with reliable performance is necessary to be competitive in the disk drive market in col. 1 lines 13-20.

Regarding claim 14:

Lenny teaches the at least one manufacture test process including at least one of flaw mapping, embedded runout compensation (ERC) and final verification in col. 8 lines 64-65 and col. 9 lines 7-10.

Regarding claim 15:

Lenny teaches the detected condition comprising a user command pending from the computer system and the computer system in an idle mode in col. 2 line 67-col. 3 line 1.

Regarding claim 19:

Lenny teaches performing at least a portion of the manufacture test processes prior to installation of the disk drive in a computer system in order to identify any major flaw which may exist on the disk in col. 1 lines 47-61 and col. 6 lines 31-36.

Regarding claim 20:

Lenny teaches wherein a program for performing the at least one manufacturing test process is placed in memory on the disk before the step of installing the disk drive in the computer system in col. 4 lines 20-22. The tests are run during manufacturing as well as after installation and therefore must be stored on the disk prior to manufacturing.

Claims 6 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lenny et al. in view of Ono et al.

Regarding claims 6 and 29:

The teachings of Lenny are outlined above.

Lenny does not explicitly teach accessing memory to determine which cylinder was last processed, performing the ERC on the next cylinder and updating memory to indication completion of the ERC on the next cylinder. Lenny does, however, teach stopping and restarting the tests after interruption from a host command.

Ono teaches accessing memory to determine which cylinder was last processed, performing the ERC on the next cylinder and updating memory to indication completion of the ERC on the next cylinder in col. 2 lines 10-22.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the register of Ono with the test restart of Lenny.

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because the register of Ono meets implicit need of Lenny. Lenny teaches restarting a test after host command interruption. It is an implicitly stated need in Lenny to store an indicator of where the test was stopped so that the test can be restarted after host command interruption.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lenny and Rothberg (106) as applied to claim 13 above, and further in view of Ono et al.

The teachings of Lenny and Rothberg (106) are outlined above.

Lenny and Rothberg (106) do not explicitly teach accessing memory to determine which cylinder was last processed, performing the ERC on the next cylinder and updating memory to indication completion of the ERC on the next cylinder. Lenny and Rothberg (106) do, however, teach stopping and restarting the tests after interruption from a host command.

Ono teaches accessing memory to determine which cylinder was last processed, performing the ERC on the next cylinder and updating memory to indication completion of the ERC on the next cylinder in col. 2 lines 10-22.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the register of Ono with the test restart of Lenny and Rothberg (106).

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because the register of Ono meets implicit need of Lenny and Rothberg (106). Lenny and Rothberg (106) teach restarting a test after host command interruption. It is an implicitly stated need in Lenny and Rothberg (106) to store an indicator of where the test was stopped so that the test can be restarted after host command interruption.

Allowable Subject Matter

Claims 3-5, 7-8, 12, 16, 18, 21, 26-28, 30-32 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Prior art was not found that explicitly teaches or fairly suggests performing one flaw mapping test if a user command is pending and a second flaw mapping test if the computer is in idle mode as outlined in claims 3, 16 and 26. Prior art was not found that explicitly teaches or fairly suggests performing one final verification test if a user

command is pending and a second final verification test if the computer is in idle mode as outlined in claims 7, 18 and 30. Prior art was not found that explicitly teaches or fairly suggests testing a predetermined percentage of the tracks as well as every Nth one of the tracks prior to the drives installation in a computer system as outlined in claims 12, 21 and 35. These limitations are considered allowable only when taken in combination with all limitations of the base claims and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon contains elements of the instant claims and/or represents a current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc M Duncan whose telephone number is 703-305-4622. The examiner can normally be reached on M-T and TH-F 6:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on 703-305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2113

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

md



ROBERT BEAUSOEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100